REMARKS

On page 2 of the Office Action, claims 9, 32, 38 and 42 were rejected under 35 U.S.C. § 112, second paragraph for antecedent basis issues. Claims 9, 32, 38 and 42 are amended herewith to resolve the antecedent basis issues.

Also on page 2 of the Office Action, the drawings were objected to under 37 C.F.R. § 1.83(a) as not showing the equalization of analog symbols per claims 82, 85 and 88. On page 3 of the Office Action, claims 82, 85 and 88 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Claims 82, 85 and 88 are amended herewith to remove the word "analog," thus obviating the objection to the drawings and the 112 rejection.

On pages 3-5 of the Office Action, claims 1, 6-8, 11, 12, 18, 20, 22, 23, 28, 32, 37, 38, 42, 57, 61, and 71 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ling (International Application No. WO/98/39871), in view of any/all of Ungerboeck ("Channel coding with multilevel/phase signals"), Lee ("Convolutional Coding: Fundamentals and Applications"), and Schlegl ("Trellis Coding") and further in view of Uyematsu et al. ("Trellis coded modulation for multilevel photon communication systems"). Claim 1 is directed to a method of transmitting data on an optical channel. The clam as amended herewith includes "mapping the encoded information into digital multilevel symbols, wherein the digital multilevel symbols are part of a pulse amplitude modulation (PAM) alphabet comprising at least three symbols; converting the digital multilevel symbols into analog multilevel signals; and modulating the intensity of a transmitting light source according to the level of the analog multilevel signals." Thus claim 1 includes transmitting multilevel signals over an optical channel. Applicant submits that this is not taught or suggested by the cited art. The Examiner acknowledges that Ling does not teach transmitting analog multilevel signals over an optical channel. Although the Examiner can find no prior art that teaches transmitting analog multilevel signals over an optical channel, he asserts that it would have been obvious to do so. Applicant disagrees. To support his assertion, the Examiner argues at length, on pages 4 and 5 of the Office Action, that it would be obvious to apply the trellis coded modulation of Ling to the

optical communication system of Uyematsu. Applicant submits that even if it were obvious to apply the trellis coded modulation of Ling to the optical communication system of Uyematsu, it in no way follows that it is obvious to transmit multilevel signals over an optical channel, per claim 1. Therefore, Applicant submits that claim 1 is allowable over the cited art.

Claim 1 is also amended herewith to specify "mapping the encoded information into digital multilevel symbols, wherein the digital multilevel symbols are part of a pulse amplitude modulation (PAM) alphabet comprising at least three symbols," and "modulating the intensity of a transmitting light source according to the level of the analog multilevel signals." Applicant submits that these limitations are not taught by the cited art. Applicant therefore submits that claim 1 and all claims depending therefrom are allowable over the cited art.

Independent claims 11, 23, 32, 38, 42, 57, 61, and 71 as amended herewith contain limitations similar to limitations contained in claim 1 and were rejected on grounds similar to those used to reject claim 1. Applicant submits that claims 11, 32, 38, 42, 57, 61, and 71, and all claims depending therefrom, are allowable over the cited art for the reasons set forth above with respect to claim 1.

Further regarding claim 11, said claim includes a limitation of "transmitting the analog multilevel signals by time division multiplexing the plurality of analog multilevel signals onto an optical channel." On page 7 of the Office Action, the Examiner acknowledges that none of the art he has cited teaches this limitation. However, the Examiner invokes "Official Notice" and alleges that this limitation constitutes an "extremely well-known practice." On page 6 of the Office Action, the Examiner alleges that "transmitting a time division multiplexed signal is a common way to transmit multiple channels of data across a single optical communication line (fiber)." Applicant strongly disagrees and submits that the Examiner cannot fall back on Official Notice for such a critical element of the claimed invention. If the Examiner is going to make the assertion that "transmitting a time division multiplexed signal is a common way to transmit multiple channels of data across a single optical communication line," he needs to support such a crucial allegation with actual prior art. Applicant submits that he is unable to do so because no such art exists. Therefore, claim 11 further distinguishes over the cited art.

Appln. No.: 09/765,014
Amdt. dated February 22, 2011

New dependent claims 100-115 are submitted herewith. Applicant submits that claims 100-115 further distinguish their respective base claims over the cited art.

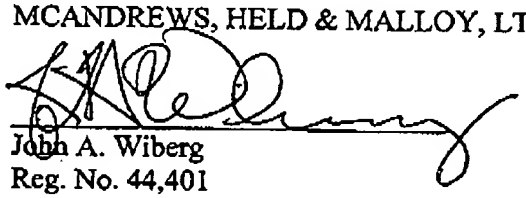
In view of the foregoing, Applicant respectfully requests allowance of claims 1, 5-9, 11-12, 16, 18-20, 22-23, 32, 36-38, 41-42, 45, 57, 60-61, 64, 71, 74 and 81-115.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Respectfully submitted,

Date: February 22, 2011

MCANDREWS, HELD & MALLOY, LTD.



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